WE CLAIM:

1. A method for recovering target speech based on speech segment detection under a stationary noise, the method comprising:

a first step of receiving target speech emitted from a sound source and a noise emitted from another sound source and forming mixed signals at a first microphone and at a second microphone, which are provided at separate locations, performing the Fourier transform of the mixed signals from a time domain to a frequency domain, and extracting estimated spectra Y* and Y corresponding to the target speech and the noise by use of the Independent Component Analysis;

a second step of separating the estimated spectra Y* into an estimated spectrum series group y* in which the noise is removed and an estimated spectrum series group y in which the noise remains by applying separation judgment criteria based on a kurtosis of an amplitude distribution of each of estimated spectrum series in Y*;

a third step of detecting a speech segment and a noise segment in a frame number domain of a total sum F of all the estimated spectrum series in y* by applying detection judgment criteria based on a predetermined threshold value β that is determined by a maximum value of F; and

a fourth step of extracting components falling in the speech segment from each of the estimated spectrum series in Y* to generate a recovered spectrum group of the target speech, and performing the inverse Fourier transform of the recovered spectrum group from the frequency domain to the time domain to generate a recovered signal of the target speech.

2. The method set forth in Claim 1, wherein the detection judgment criteria define the speech segment as a frame number range where the total sum F is greater than the threshold value β and the noise segment as a frame number range where the total sum F is less than or equal to the threshold value β.

3. A method for recovering target speech based on speech segment detection under a stationary noise, the method comprising:

a first step of receiving target speech emitted from a sound source and a noise emitted from another sound source and forming mixed signals at a first microphone and at a second microphone, which are provided at separate locations, performing the Fourier transform of the mixed signals from a time domain to a frequency domain, and extracting estimated spectra Y* and Y corresponding to the target speech and the noise by use of the Independent Component Analysis;

a second step of separating the estimated spectra Y* into an estimated spectrum series group y* in which the noise is removed and an estimated spectrum series group y in which the noise remains by applying separation judgment criteria based on a kurtosis of an amplitude distribution of each of estimated spectrum series in Y*;

a third step of detecting a speech segment and a noise segment in the time domain of a total sum F of all the estimated spectrum series in y* by applying detection judgment criteria based on a predetermined threshold value β that is determined by a maximum value of F; and

a fourth step of performing the inverse Fourier transform of the estimated spectra Y* from the frequency domain to the time domain to generate a recovered signal of the target speech and extracting components falling in the speech segment from the recovered signal of the target speech to recover the target speech.

4. The method set forth in Claim 3, wherein the detection judgment criteria define the speech segment as a time interval where the total sum F is greater than the threshold value β, and the noise segment as a time interval where the total sum F is less than or equal to the threshold value β.

5. The method set forth in Claim 1, 2, 3, or 4, wherein the kurtosis of the amplitude distribution of each of the estimated spectrum series in Y* is evaluated by means of entropy E of the amplitude distribution.

6. The method set forth in Claim 5, wherein the separation judgment criteria are given as:

(1) if the entropy E of an estimated spectrum series in Y* is less than a predetermined threshold value α, the estimated spectrum series in Y* is assigned to the estimated spectrum series group y*; and

(2) if the entropy E of an estimated spectrum series in Y* is greater than or equal to the threshold value α, the estimated spectrum series in Y* is assigned to the estimated spectrum series group y.